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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,916	03/07/2005	Yasuhiro Omori	JFE-05-1032	7535
35811 7590 04/21/2009 IP GROUP OF DLA PIPER US LLP ONE LIBERTY PLACE 1650 MARKET ST, SUITE 4900 PHILADELPHIA, PA 19103				
EXAMINER YANG, JIE				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
04/21/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/526,916

**Applicant(s)**

OMORI ET AL.

**Examiner**

JIE YANG

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)  
Paper No(s)/Mail Date 1/8/2009
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

Claims 23-30 are pending. No amendments to the claims have been made.

***Information Disclosure Statement***

Regard IDS marked 1/8/2009, the NPL references AL, AM, AN, AO, AP on first page, AL and Am on page 2, and AM on page 3 are marked out from present information for duplicating the documents AL to AT in the previous IDS marked 3/7/2005.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochi et al (US 6,602,358, thereafter US'358) in view of Ochi et al (US 6,660,105 B1, thereafter US'105) and Asano et al (US 7,083,688, thereafter US'688).

US'358 in view of US'105 and US'688 is applied to the claims 23-30 for the same reason as stated in the previous rejection dated 8/12/2008.

***Response to Arguments***

Applicant's arguments filed on 6/16/2008 with respect to claims 23-30 have been fully considered but they are not persuasive.

Applicant's arguments are summarized as follows:

1, Ochi et al (US'358) does not teach hot working, in particular, Ochi et al (US'358) teaches cold forging.

2, Ochi et al (US'105) teaches hot forging, which would not combine Ochi et al (US'358) because Ochi et al (US'358) only teaches cold forging.

3, Asano et al (US'688) does not disclose or suggest about heating temperature of induction hardening. Further, the applicants argues that selecting a heating temperature of final induction hardening of 800-950°C results in an unexpectedly fine size of austenite grain (prior) as shown in Fig.2 when an appropriate amount of Mo is contained.

Responses are as follows:

Regarding the arguments 1 and 2, the Examiner disagrees with the Applicant's argument because US'358 clearly teaches all the steel samples were hot forged into square bars, hot rolled into steel bars, and cold forged (Col.7, lines 17-32 of US'358), which covers the hot working as recited in the instant invention. Because the Applicant uses "comprising" language in the instant claim 23, which does not exclude the extra process steps, for example cold forging as taught by US'358.

Regarding the argument 3, the Examiner notes US'358 teaches the former austenite grain size of not less than 8 in terms of the grain size number specified in JIS (Japanese Industrial Standards), which overlaps the size of austenite grain (prior) as recited in Fig.2 as recited in the instant specification. As pointed out in the previous office action marked 8/12/2008, The temperature of the induction hardening process is recognized as a result-effective variable in term of hardening result as evidenced by US'688. US'688 teaches the surface temperature of the test part could be raised by high-frequency heating in 0.9 second to 850°C and raised to 1150°C by adding 1.9 seconds more (Col.4, lines 47 to 52 of US'688). Because the size of austenite grain not only depends on the temperature of induction heating but also depends on the heating rate, therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select proper temperature and heating rate for induction hardening as demonstrated by US'688 in the process of US'358 in view of US'105 in order to obtain the desired surface hardness (Col.4, lines 11-14 of US'688). MPEP 2144.05 II.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-270-1884. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY

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/Roy King/

Supervisory Patent Examiner, Art Unit 1793